NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC BASIN AREA
CONSERVATION PRACTICE STANDARD

MULCHING

(Hectare, Acre)
CODE 484

DEFINITION

Applying plant residues or other suitable materials not produced on the site to the soil surface.

PURPOSE

- To conserve moisture; prevent surface compaction or crusting;
- To control weeds;
- To help establish plant cover;
- To help reduce sheet and rill erosion; and,
- To improve soil quality.

CONDITIONS WHERE PRACTICE APPLIES

On soils subject to erosion on which low residue-producing crops, such as papaya and small fruits, are grown; on critical areas; and on soils that have a low infiltration rate. This practice does not apply to the application of residues as a nutrient source or the application of animal or municipal waste.

CRITERIA

Material to be applied will be suitable for the planned purpose. Suitable material include wood chips, grass clippings, leaf litter, and commercial paper and plastic mulch products specifically designed for this purpose.

Mulch should be free of contaminants such as metals, glass, plastics, etc. that could impede future use of the site. Material should be free of dead animals, household garbage, and other materials that may cause environmental or health problems.

Application dates and rates will be planned to accomplish purpose and be coordinated with other prescribed practices, such as tree and shrub establishment, critical area planting, etc.

Where mulching is used to reduce sheet and rill erosion, the depth of organic mulch applied will be maintained to provide 90% soil cover. In meeting this purpose Mulching (484) is more effective when used with other Pacific Basin standards, Contour Farming (330), Contour Orchard and Other Fruit Area (331), Cover Crop (340), Hedgerow Planting (422), and/or Windbreak/Shelterbelt Establishment (380).

An organic mulch shall be selected and applied in amounts equal to or greater than to the soil organic matter content, as determined by using available and approved soil analysis tools.

PLANNING CONSIDERATIONS

Sufficient mulch material shall be readily available. The area to be mulched must be fairly even and free of small rills.

Where mulch is used to protect cropland or to establish a permanent vegetative cover, an adequate fertility level should be maintained. As a general rule, twenty-five (25 pounds) of available N per ton of mulch is needed to maintain a favorable carbon/nitrogen (C/N) ratio at the soil/mulch interface.

Effects on visual quality need to be considered.

WATER QUANTITY

Mulching may have a minor effect on the quantity of surface and ground water. If there are large areas involved, there may be a reduction of surface runoff and increased infiltration and percolation.

Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

Effects of mulching on soil moisture.

Effects of increased organic matter on water holding capacity of the soil.

Potential for a change in plant growth and transpiration because of changed in soil water volume.

WATER QUALITY

This practice may reduce soil erosion and sediment delivery to surface waters. Decomposition of mulch material may result in release of nutrients into the soil, increasing the amount that can be washed into surface waters or leached into ground water.

Effects on erosion and movement of sediment and soluble and sediment attached substances carried by runoff.

Filtering effects of mulch on movement of sediment and dissolved and sediment-attached substance.

Effects on the visual quality of downstream water resources.

Effects of nitrogen additions from decaying organic matter on surface and groundwater resources.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan, or other acceptable documentation.

Specifications for each site should include application rate, minimum and maximum depth, type of material to be used, and frequency of application, if applicable.

OPERATION AND MAINTENANCE

Rate of decomposition will be evaluated, and additional mulch material added as needed to meet the intent of the practice.